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RISK OF LOSS OF PEOPLE OR ANY OTHER SERIOUS CONSEQUENCES OF PRODUCTION: PRE-CASE INVESTIGATION, FORENSIC SCIENCE

The article is devoted to the development of forensic engineering in the field of labor protection while investigation of crimes against the industrial safety. Based on the analysis of specific forensic examinations and ordering of scientific literature proposes the creation of a unified methodological approach to problem solving forensic expertise with a real threat of death or the occurrence of other severe consequences in production to establish the causes and consequences of emergencies, cause-effect relationships in the system of «action / in action of a person – emergency.»

Under the «real threat of death or the occurrence of other severe consequences, «it is necessary to understand such changes in the state of production objects because of which there is a real danger to the life or health of people or hurting a variety of benefits.

Creation of the threat of death or other severe consequences must be real, indicative of the occurrence of a production process or because of such a dangerous state (threats), may occur when the consequences prescribed by law. Not occurrence of the consequences can be associated either with the timely suppression of the violation, or with a «stroke of luck.»

Other serious consequences are grievous bodily harm to one or more persons, moderately bodily harms two or more persons, significant material damage to citizens and companies.

While resolving examination issues, the following should be indicated: what is the real threat of death or the occurrence of other severe consequences; who and what deflections from the regulatory and legal acts on labor protection allowed in this production situation; who of the persons involved in the event had the technical ability

to prevent the creation of a real threat of death or other severe consequences, what actions to do so they had to carry out and what their actions (inaction) from a technical point of view is in direct causation connection with the emergence of these hazardous working conditions.

Keywords: production, threat of death, other severe consequences, emergency, forensic science.

Formulation of Research Problem. Violations of the requirements of regulations on labor protection often lead to injuries and deaths.

According to requirements of Article 43 of the Constitution of Ukraine, every citizen has the right to adequate, safe and healthy working conditions. The Law of Ukraine: *On Occupational Safety* specifies that priority of the life and health of employees, the full responsibility of the employer for the creation of proper, safe and healthy working conditions is one of the basic principles of state policy in the field of occupational safety¹. At the same time, the state of occupational safety at Ukrainian enterprises is unsatisfactory, the level of occupational injuries is high and due to a complex of objective and subjective reasons. In recent years, though, there has been a tendency in our country to reduce the level of technogenic accidents, accidents, occupational diseases (hereinafter referred to as NA), but most likely due to a decrease in labor intensity and output. In 2018, the Social Insurance Fund of Ukraine registered 4805 (350 of them fatally) victims of industrial accidents.

As we can see, there is no dramatic improvement in the situation in the field of occupational safety. This necessitates further search for effective solutions to these problems. One of the most important areas in this regard is to improve the quality of investigations into crimes against production safety. This article identifies one of the main problems of litigation in the investigation of crimes against industrial safety (Part 1 of Article 272... 275 of the Criminal Code of Ukraine: creation of a unified methodological approach to solving problems of forensic engineering and technical expertise in the field of labor protection and safety of life with a real threat of death or other serious consequences on the production.

Since 1997 the authors of the article have performed more than 300 forensic engineering and technical on the safety and life of forensics to address the real threat of death or other serious consequences on the production.

Unfortunately, some forensic experts have recently shown a tendency to point out in their findings that a real threat of death or other grave consequences may not occur and is a likely category. For this reason, the actions of those involved in the event are technically likely to

¹ Pro okhoronu pratsi [On Labor Protection]: Zakon Ukrainy vid 14.10.1992 № 2694–Khii. Vidomosti Verkhovnoi Rady Ukrainy. 1992. № 49. St. 668. URL : <https://zakon.rada.gov.ua/laws/show/2694-12> [in Ukrainian].

be causally linked to the occurrence of hazardous working conditions. But this statement contradicts the instructions of the Plenum of the Supreme Court of Ukraine 12.06.09 № 7¹.

Analysis of recent research and publications. The research of the existing shortcomings of the methods of judicial examination on the issues of regulatory regulation, organization of conducting and scientific and methodological provision of expert studies in the field of occupational safety and health is constantly given the attention of scientists and practitioners.

Research in the field of occupational safety and health since the 90's of the twentieth century were conducted by such judicial scientists as L. V. Afanasiev, A. T. Asherov, A. S. Belikov, Ye. Yu. Bielohurova, V. D. Bezvesilnyi, V. A. Gorbenco, O. F. Dyachenko, L. E. Duz, Yu. A. Kiryanov, V. V. Sabadash, E. B. Simakova-Yefremian, N. A. Reshetnikova, O. V. Taran and others. However, further research needs to address the problem of creating a methodology for establishing cause and effect relationships in the system of «action / inactivity of a person – an event of emergency» in the face of death or other serious consequences in the production.

Article purpose. The purpose of the study is to develop a unified methodological approach for solving court expert tasks for establishing the causes and consequences of emergencies, cause and effect relationships in the system «action / inactivity of the individual – event of emergencies» in the appointment and conduct of judicial expertise in the field of occupational safety in the real threat of death people or other serious effects on the production.

Main content presentation. In case of violation of the requirements of the normative legal acts on labor protection, the offenders are criminally responsible for parts 1 of articles 272 – 275 of the Criminal Code. They state that in case of violations of the requirements of normative legal acts on labor protection during: performance of works of high risk (Part 1 of Article 272 of the Criminal Code); at the enterprise (workshop) classified as explosive (Part 1 of Article 273 of the Criminal Code); work with radioactive materials (access to them, their storage, use, disposal, etc.) (Part 1 of Article 274 of the Criminal Code); the design, construction, manufacture or storage of industrial products, as well as during the design, construction, operation of buildings and structures (Part 1 of Article 275 of the Criminal Code), shall be punishable by criminal

¹ Pro praktyku zastosuvannya sudamy Ukrainy zakonodavstva u spravakh pro zlochyny proty bezpeky vyrobnytstva[On the Practice of the Application by the Courts of Ukraine of Legislation on Crimes Against Production Security: Resolution of the Supreme Court of Ukraine] : postanova Verkhovnoho Sudu Ukrainy vid 12.06.09 № 7. URL : <https://zakon.rada.gov.ua/laws/show/va007700-09> [in Ukrainian].

prosecution if such violation creates a real risk of death or other grave consequences, or caused harm to the health of the victim.

The «real threat of death or other grave consequences» should be understood to mean changes in the condition of production facilities that cause a real threat to the life or health of people or to the detriment of various goods. The severity of the probable consequences is determined by the value of the jeopardized goods, the number of persons likely to be harmed, the magnitude of the material damage etc.

Creating a threat of death or other grave consequences must be real, testify to the occurrence of a production process or the result of such a dangerous state (threat), when the consequences of the law may occur.

Non-occurrence of consequences may be due either to the timely termination of the violation by the offender as well as by others, or by «accident.»

Other grave consequences are the infliction of grievous bodily harm to one or more persons, the moderate severity of bodily harm to two or more persons, considerable material damage to a state, public organization or citizens, as well as prolonged downtime of enterprises, workshops or their manufacturing sites. Merely establishing significant material and other such damage is not enough to recognize it because of the crime being analyzed. It should be the result of a breach of the requirements of the occupational safety and health regulations and be accompanied by a threat to the life or health of the person, or to the injury of varying severity. The negative impact of violations of occupational safety requirements on the production process is characterized by inertia and chance due to the objectively correlating dependence between the admitted workers of the industrial enterprise deviations from the requirements of normative legal acts on occupational safety (rules, norms, instructions, regulations, permits, technical approvals). and technological documentation and the consequences that followed¹. In other words, due to non-compliance with the requirements of technical norms and rules of

¹ *Krupka A. A.* Inercionnost' i sluchajnost' negativnykh vozdeystviy na proizvodstvennyy process otstupleniy ot trebovaniy normativno-pravovykh aktov ob ohrane truda [inertia and randomness of negative impacts on the production process of deviations from the requirements of regulatory legal acts on labor protection]. *Teoriya ta praktika sudovoi ekspertizi i kriminalistiki*. Vip. 8. H. : Pravo / HNDI sudovih ekspertiz im. M. S. Bokarius, Nacional'na juridichna akademija Ukraïni im. Ja. Mudrogo, 2008. S. 404–407 [in Russian]; *Krupka A. A.* Sudova hirnychotekhnichna ekspertyza [Sudova expert examination: tired form of appointment and performance]: ustaleni formy pryznachennia ta provedennia : monohrafiia. Donetsk, 2010. 80 s.; *Krupka A. A., Kryvchenko Yu. O., Marchenko I. M.* Ekspertna otsinka stvorennia zahrozy zahybely liudei abo nastannia inshykh tiazhykh naslidkiv na vyrobnytstvi [Ekspertna otsinka osnorenny threaten the deaths of people, but rather the imposition of the most serious heavy violations of the law]. *Visti Donetskoho hirnychoho instytutu. Vseukrainskyi naukovo-tekhnichnyi zhurnal hirnychoho profilu*. 2011. № 1. S. 159–166 [in Ukrainian].

conduct, emergencies do not always immediately arise, negative impacts can accumulate indefinitely for a long time and only, in the end, cause an event with consequences, the severity of which is not foreseen, and in a more favorable case, many circumstances. in many respects depend on stochastic production and natural conditions which have developed during the period of conducting works, and they do not lead at all to emergencies.

Therefore, if the emergencies are conditioned by human factors, then the presence of a person who has allowed deviation from the requirements of the normative legal acts on labor protection at the place of occurrence of the event is optional. In the period of inertial delay almost always creates a real threat of death or other grave consequences, if the result of tolerances from the requirements of regulatory legal acts on labor protection will be even without the event for enterprises and its employees.

In case of violation of the requirements of safety rules during the execution of works with high risk (Part 1 of Art. 272 of the Criminal Code), it is necessary to follow the «Procedure for granting permits for performing works of high risk and for the operation (use) of machines, mechanisms, equipment of high risk», which defines the list high-risk works, as well as the Law of Ukraine: *On Labor Protection*, other legislative or regulatory acts (sectoral or inter-sectoral), which set safety rules during the relevant works.

Affiliation of an enterprise (workshop) to explosive (Part 1 of Article 273 of the Criminal Code) is determined not by the nature of the consequences that followed, but by the category and class of production according to the explosion hazard set by the technological regulations.

These categories, classes and similar characteristics are established by design organizations, ministries, industrial associations, state labor bodies and some other organizations, both for the enterprise, and for its individual part or start-up complex, as well as for various basic (workshop, plot), offices) and auxiliary (warehouse, laboratory) production units, external equipment, coal seams and other production facilities.

As the legislatively established special rules of nuclear and radiation safety in production reduce to the rules of work with radioactive materials, access to them, their storage, use, disposal, there is reason to believe that the subject of this crime are radioactive materials.

Rules relating to the safe use of industrial products and the safe operation of buildings and structures include standards (state, sectoral, enterprise standards), state building codes; separate decisions of the competent authorities to ban the use of certain materials, raw materials, semi-finished products; acts which set maximum permissible concentrations of harmful substances in finished products; regulations of state inspectors, etc.

In investigating crimes against production safety, the objective side is characterized by: a) acting in the form of a violation of the requirements of the relevant normative legal acts on labor protection; b) the

consequences in the form of a threat of death or other grave consequences, causing harm to the health of the victim (Part 1 of Article 274 of the Criminal Code), or in the form of death of a person or other grave consequences (Part 2 of Article 274 of the Criminal Code); c) the direct causal link between the act and the consequences, d) the place and the time of the crime. The control over compliance with the legislation on labor protection at production sites is carried out by the state labor bodies, departmental supervision and the labor protection service of the enterprise.

At the same time the compliance with the requirements of technical norms, rules, instructions, provisions governing safety at work at the production, technology of works, mode parameters, the technical condition of buildings, structures, machines, mechanisms, means of protection and control, etc. are checked. Because of these inspections, certificates, acts and orders are issued, orders for elimination of violations are made, the persons who have admitted them and are responsible for the elimination of the identified defects are indicated.

Among these violations, some, seemingly insignificant, may be those which result in a real risk of emergencies at the site and / or a threat to human life and health and other serious consequences and which are subject to Part 1. Art. 272 – 275 of the Criminal Code. In this case, the person responsible for eliminating these violations, at the time of the emergence of the emergency may not be at all not only in the workplace or place of the accident, but also at the enterprise, including for good reasons (day off, business trip, illness, vacation, etc.).

However, the inertia of the negative impacts on the production process by these officials is in direct (direct) cause and effect with the possible consequences. Pre-trial investigation, as a rule, is conducted on the submission of State Labor bodies to the prosecutor's office, the national police.

The criminal proceedings must contain the following documents:

- information set out in the cover letter or separate document regarding the violations identified, indicating: the value of the goods at risk; the number of persons who may be harmed by dangerous acts; the amount of possible material damage; what are the requirements of labor safety regulations? the names, surnames, patronymic of the offender; other circumstances (location, time of detection, duration of violation); the measures taken earlier by the body of the territorial body of the State Labor Office to prevent violations of the requirements of normative legal acts on labor protection;

- explanatory note from a public servant (state inspector) of the State Labor Inspectorate who found a violation during the inspection, referring to the provisions of the regulations on labor protection, whose requirements were violated, and other documents regarding this violation, signs indicating the presence of a threat of death or other serious consequences;

- copies of written explanations of violators or persons responsible for compliance with the requirements of normative legal acts on labor protection and employees involved in the event (if any);
- conclusions of the experts involved in the inspection of labor protection (as a rule, these specialists are the chief state inspectors of the State Labor).

During the pre-trial investigation, the following are duly approved at the enterprise: Charter of the enterprise; permits of the State Labor body to carry out high-risk works and to operate machines, mechanisms, high-risk equipment; regulations of officials of the State Labor bodies and departmental supervision, the enterprise labor protection service;

Regulations on the Occupational Safety and Health Management System at the Enterprise; technological passport (project) of production works; orders concerning safety issues issued by the enterprise administration; job descriptions of engineering and technical workers: chief engineer of the enterprise, deputy director of production and labor protection, chief of shift, dispatcher, chief (deputy, assistant chief) of the site, mechanic, master, etc.; Instructions for labor protection of workers; instructions for the safe conduct of certain types of work, operation of equipment, machines, mechanisms, devices, environmental protection and their technical characteristics; technical passports, conditions and list of equipment directly involved in the production process; materials that contain data on the technical condition of the equipment, machines, mechanisms and are directly related to the process of carrying out production work (acts of tests, technical inspections, etc.); documents containing the qualifications of persons performing high-risk work or operating high-risk machinery involved in the production process; books of outfits, outfits, outfits, outfits of craftsmen, which would confirm the fact that there are workers in the place where there is a risk of death or other grave consequences and the adequacy of their work performed by the assigned variable task; logs of training and instruction on safety of workers, inspection of equipment, measurements of various parameters, inspection; outputs of employees to work. Depending on the type of production, technological operations and the place where the risk of death or other grave consequences was created, this list can certainly be supplemented.

As a rule, for the purpose of a comprehensive, complete and impartial investigation of the circumstances of criminal proceedings, it is designated and conducted in accordance with the requirements of Articles 69, 242, 243 of the Criminal Procedure Code of Ukraine) and Article 7 of the Law of Ukraine: *On Forensic Examination*, judicial engineering and technical expertise on occupational safety.

The logical and epistemological structure of forensic research on the real threat to human life and health and the occurrence of other grave consequences can be reduced to the following universal questions:

1) requirements of which regulations on labor protection in this production situation regulate the actions of persons involved in creating a real threat of death or other grave consequences?

2) whether work is performed in this production situation with high-risk work (or at an enterprise (workshop), classified as explosive or with radioactive materials, or in the design, construction, manufacture or storage of industrial products, as well as during the design, construction, operation buildings and structures)?

3) what specifically, in this production situation, was there a real threat of death or other grave consequences?

4) who and what deviations from the normative-legal acts on labor protection have allowed in this production situation?

5) who of the persons involved in the event had the technical ability to prevent the real threat of death or other grave consequences, what actions they had to take and what their actions (inaction) are in direct causal connection with the emergence of these dangerous working conditions? Here are examples of the appointment and conduct of forensics on criminal proceedings with the emergence of a real threat of death or other serious consequences when performing high-risk work at work.

Example. In January 2018, the Department of Industrial Safety of PJSC XXX XXX carried out a labor safety inspection and the head of the workshop # 2 K ordered to ban the operation of the crane # 8 in connection with the failure of his expert examination and extraordinary full technical inspection after the end of the border service life. However, on November 14, 2018, during the inspection of the State Labor Office in the XXX region, it was established that the crane № 8 from February 20 to November 14, 2018, being in a faulty technical condition, was operated.

As a result, the forensic examination raised the following questions: was the operation of the bridge crane № 8, when performing works of high risk at the production, the risk of death of people or the occurrence of other grave consequences? is there a direct cause and effect relationship between the actions (inactivity) of the officials of workshop № 2 of PJSC XXX XXX and the event of a probable accident?

The forensic expert made the following conclusions: in this production situation, the operation of the bridge crane №. 8, which did not pass expert examination and extraordinary full technical inspection after the end of the service life, and was also in a fault condition (wear of the rolling surface (reduction of diameter more than 2%) two wheels of the auxiliary trolley; there is no one clamping strap for securing the main lift rope to the drive drum; not all clamping rails for securing the auxiliary rope to the drive drum are installed; glazing elements of the cabin do not provide the necessary visibility, partly made of non-shattered glass; loosening of the crane suspension bracket attachment; there is no fence of the main lift mechanism coupling; malfunctioning brake of the left-hand drive of the crane movement mechanism; a faulty brake of the left drive of the mechanism of movement of the main trolley; malfunctioning brake of

the auxiliary trolley; there is no possibility to check the door locks on the crane bridge gallery (doors welded); faulty maximum current protection), could have caused injury to workers in the event of a rope breakage, a crane hit, rotating mechanisms, glass, electric shock, and thus created a real risk of death or other serious consequences. In the considered production situation, the head of the workshop №. 2 of PJSC XXX XX «XXX» K. had the technical ability to prevent the possible occurrence of a real emergency, but for reasons that should be established by an investigative way, he did not use it, so his actions did not meet the requirements of regulations from the point of view of safety and, from a technical point of view, were in direct causal connection with the real threat of death or other grave consequences.

Conclusions. In conducting pre-trial investigation of violations of the requirements of regulatory acts on occupational safety, the appointment and conduct of forensic engineering and technical expertise on occupational safety and health is mandatory. In their conclusions, forensic experts should indicate: in what particular circumstances, in this production situation, was the real threat of death or other grave consequences; who and what deviations from the requirements of normative-legal acts on labor protection have allowed in this production situation; who of the persons involved in the event had the technical ability to prevent the real threat of death or other grave consequences, what actions they had to take and what their actions (inactivity) are technically causally related to the occurrence of these dangerous working conditions.

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ЗАГРОЗА ЗАГИБЕЛІ ЛЮДЕЙ ЧИ НАСТАННЯ ІНШИХ ТЯЖКИХ НАСЛІДКІВ НА ВИРОБНИЦТВІ: ДОСУДОВЕ РОЗСЛІДУВАННЯ, СУДОВА ЕКСПЕРТИЗА

Статтю присвячено розвитку судової інженерно-технічної експертизи в галузі охорони праці та безпеки життєдіяльності при розслідуванні злочинів проти безпеки виробництва. На основі аналізу конкретних судових експертиз та систематизації наукових джерел звернуто увагу на важливість та необхідність розробки єдиного методологічного підходу до вирішення проблем судової інженерно-технічної експертизи в галузі охорони праці та безпеки життєдіяльності при реальній загрозі загибелі людей чи настання інших тяжких наслідків на виробництві.

Ключові слова: виробництво; загроза загибелі людей; інші тяжкі наслідки; надзвичайна ситуація; охорона праці; судова експертиза.

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